REMARKS

This paper is responsive to the Office Action dated June 19, 2002. Claims 1-43 remain in this application. First, the Applicant would like to express its gratitude toward the Examiner for taking the time to discuss the present application by telephone (on August 8, 2002 and on September 4, 2002) prior to this submission. The amendments herein reflect the subject matter discussed by telephone with the Examiner and are believed to place the claims in condition for allowance.

A brief description of the present application is provided because it is believed that a clarification of the application will demonstrate that the claims are in condition for allowance.

The present invention is directed toward graphics applications in network environments. Computers on a network (such as an Ethernet network, a local area network and/or a wide area network) can be categorized as two types: servers and clients. Those computers that provide services (e.g., Web Services) to other computers are servers (like JAVA servers or Mainframe servers); the computers that connect to and utilize those services are clients. In addition, clients can be categorized as thin clients or thick clients. A thin client is a small, stateless, "plug and work" desktop computer whose main function is to process all input and output for the user and to manage communication with at least one server. All other computational tasks (or services) for the user are performed on the server, which is shared amongst a community of clients. A thick client, on the other hand, uses a more conventional general purpose computer having processing, memory, and data storage capabilities.

In an exemplary computer network system, especially one using a thin client, the graphics information concerning how and what to display (e.g., the clipped video data) is generated on the server, away from the client. The server needs to generate the graphics information and put it into network data packets that are sent over the network to the client. This represents an extra step in getting the graphics information to the

client because the client does not generate the graphics information for its local graphics card. Thus, from the client's point of view, efficiently solving the problems associated with getting the graphics information to the client over the network is important in providing satisfactory performance.

In an embodiment of the invention, a server acquires video data for transmission to a client. The server may acquire the video data by any mechanism, such as capture of a video signal using a hardware capture board, generation of video data by a video service, or input of video data from a video input device such as a video camera (see page 17, lines 1-5). After acquiring the video data from any or all of the mechanisms listed above, the server performs the necessary clipping to bring the video data (having various video protocols) into conformance with a display on a client before transmission to a receiver on the client. A transmitter on the server then transmits the clipped video data over a local network (i.e., internal network or intranet) to the receiver on the client for display. The significance of clipping video data at the server end is that the bandwidth requirements at the network for transmission of the video data are reduced due to the clipping (or extraction) of the clipped (or occluded) video data by the clipping process at the server.

In addition, an embodiment of the present invention uses a video protocol that compresses video data transmitted by a transmitter on a server. The video protocol ensures that the compression does not result in a significant loss of video quality from the original video data. Preferably, the video protocol allows the transmitter to skip the transmission of every other chroma pixel values (U,V) on the original video data.

Lastly, an embodiment of the invention achieves a further reduction in bandwidth requirements by performing downscaling of video data at a transmitter on a server and upscaling of the video data at a receiver on a client. One reason for the segregation of scaling duties (upscale only at the receiver and downscale only at the transmitter) is that scaled-down video data requires lower network bandwidth to transmit through the local network. By downscaling video data at the transmitter, the present invention avoids

sending video data to the receiver that would be discarded later by the receiver. Moreover, this segregation of scaling duties permits simplification of the receiver since resources, such as software code for downscaling video data, are not needed at the receiver.

Claims 1-43 presently remain rejected under 35 U.S.C. § 103(a) as being unpatentable over Callahan in view of Hartog. These rejections are respectively traversed.

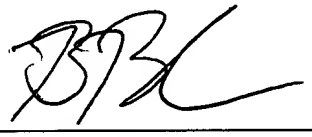
In the rejections, the Examiner acknowledges that Callahan does not disclose the limitations of "transmitting clipped image data from a transmitter on a first computer to a receiver on a second computer." To make up for this deficiency, the Examiner argues that Hartog discloses the above-cited limitations. But, Hartog does not disclose or suggest the above limitation. Instead, Hartog only discloses the implementations of data transfer within a single computer ("data transfer between the [single] computer") and not the transmission of clipped image data "from a transmitter on a first computer to a receiver on a second computer" (page 2 of the Office Action). Thus, the claim limitations as previously presented are not shown or suggested by the references. Nevertheless, in order to expedite allowance and as discussed with the Examiner on September 4, 2002, the Applicant hereby amends Claims 1, 11-14, 16-18, 21, 31-35, and 38 to further clarify the claims (e.g., by reciting a server and a client in the claims).

In view of the foregoing, the Applicant respectfully submits that Claims 1-43 are in condition for allowance. Reconsideration and withdrawal of the rejections is respectfully requested, and a timely Notice of Allowability is solicited. To the extent it would be helpful to placing this application in condition for allowance, the Applicant encourages the Examiner to contact the undersigned counsel and conduct a telephonic interview.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned **"Version with markings to show changes made."**

While the Applicant believes that no fees are due in connection with the filing of this paper, the Commissioner is authorized to charge any shortage in the fees, including extension of time fees, to Deposit Account No. 50-0639.

Respectfully submitted,



Date: September 10, 2002

Brian M. Berliner
Attorney for Applicant
Registration No. 34,549

O'MELVENY & MYERS LLP
400 South Hope Street
Los Angeles, CA 90071-2899
Telephone: (213) 430-6000

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Claims 1, 11-14, 16-18, 21, 31-35, and 38 have been amended as follows:

1. (Twice Amended) A method comprising:

obtaining image data on a [first computer] server;

clipping said image data on said [first computer] server to obtain clipped image data;

transmitting said clipped image data from a transmitter on said [first computer] server to a receiver on a [second computer] client; and

said receiver scaling said clipped image data for display.

11. (Twice Amended) A computer program product comprising:

a computer usable medium having computer readable code embodied therein for processing image data, said computer program product comprising:

computer readable code configured to cause a [first computer] server to obtain image data;

computer readable code configured to cause said [first computer] server to clip said image data to obtain clipped image data;

computer readable code configured to cause said [first computer] server to transmit said clipped image data to a receiver on a [second computer] client; and

computer readable code configured to cause said receiver to scale said clipped image data for display.

12. (Twice Amended) The computer program product of Claim 11, wherein said computer readable code configured to cause said [first computer] server to clip said image data further comprises:

computer readable code configured to cause said [first computer] server to obtain a clip-list specifying at least one clipping region; and

computer readable code configured to cause said [first computer] server to map said at least one clipping region to said image data to determine said clipped image data.

13. (Twice Amended) The computer program product of Claim 12, wherein said computer readable code configured to cause said [first computer] server to map comprises:

computer readable code configured to cause said [first computer] server to determine a nearest pixel in said image data to a location in said at least one clipping region.

14. (Twice Amended) The computer program product of Claim 13, wherein said computer readable code configured to cause said [first computer] server to determine a nearest pixel determines a Euclidean distance.

16. (Twice Amended) The computer program product of Claim 13, wherein said image data comprises one or more subsampled chroma components, and wherein said computer readable code configured to cause said [first computer] server to determine said nearest pixel further comprises:

computer readable code configured to cause said [first computer] server to determine a set of pixels that each comprise samples from said one or more subsampled chroma components;

computer readable code configured to cause said [first computer] server to determine said nearest pixel from said set of pixels.

17. (Twice Amended) The computer program product of Claim 12, wherein said at least one clipping region comprises a plurality of clipping regions, and wherein said computer readable code configured to cause said [first computer] server to map comprises computer readable code configured to cause said [first computer] server to map said plurality of clipping regions to a plurality of regions of image data.

18. (Twice Amended) The computer program product of Claim 17, wherein said computer readable code configured to cause said [first computer] server to transmit comprises computer readable code configured to cause said [first computer] server to individually transmit said plurality of regions of image data.

21. (Twice Amended) An apparatus comprising:

a network;

a thin client;

a server configured to obtain image data and transmit clipped image data over [a] said network; and

a receiver on [a] said thin client configured to receive said clipped image data over said network, said receiver further configured to scale said clipped image data for display.

31. (Twice Amended) An apparatus comprising;

means on a server for obtaining image data;

means on said server for clipping said image data to obtain clipped image data;

means for transmitting said clipped image data from a transmitter on [a] said server to a receiver on a thin client; and

means, at said receiver, for scaling said clipped image data for display.

32. (Twice Amended) A method comprising:

obtaining image data on a [first computer] server;

clipping said image data on said [first computer] server to obtain clipped image data;

transmitting said clipped image data via a computer network from a transmitter on said [first computer] server to a receiver on a [second computer] thin client; and

scaling said clipped image data for display with said receiver.

33. (Twice Amended) A computer program product comprising:

a computer usable medium having computer readable code embodied therein for processing image data, said computer program product comprising:

computer readable code configured to cause a [first computer] server to obtain image data;

computer readable code configured to cause said [first computer] server to clip said image data to obtain clipped image data;

computer readable code configured to cause said [first computer] server to transmit said clipped image data via a computer network to a receiver on a [second computer] thin client; and

computer readable code configured to cause said receiver to scale said clipped image data for display.

34. (Twice Amended) An apparatus comprising;

means on a server for obtaining image data;

means on a server for clipping said image data to obtain clipped image data;

means for transmitting said clipped image data via a computer network from a transmitter on [a] said server to a receiver on a thin client; and

means, at said receiver, for scaling said clipped image data for display.

35. (Amended) The method of Claim 1, wherein [said first computer is a server and wherein said second computer] said client is a thin client computer.

38. (Amended) The computer program product of Claim 11, wherein [said first computer is a server and wherein said second computer] said client is a thin client computer.